

**PATENT APPLICATION
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**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

INVENTOR(S): Eugene A. Roylance, et al.

SERIAL NO.: 10/626,360

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EXAMINER: Huffman, Julian D.

**SUBJECT: METHODS AND APPARATUS FOR SELECTING IMAGE
ENHANCEMENT TECHNIQUES**

U.S. PATENT AND TRADEMARK OFFICE
COMMISSIONER OF PATENTS
ALEXANDRIA, VA 22313

APPELLANTS'/APPLICANTS' OPENING BRIEF ON APPEAL

1. REAL PARTY IN INTEREST.

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holding, LLC.

2. RELATED APPEALS AND INTERFERENCES.

There are no other appeals or interferences known to Appellants, Appellants' legal representative or the Assignee which will affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS.

Claims 1, 4, and 6-9 are pending. Claims 1, 4, and 6-8 stand rejected. Claim 9 has been deemed allowable but is objected to as being dependent from a rejected base claim. Claims 2, 3, 5, and 10-22 have been cancelled.

4. STATUS OF AMENDMENTS.

No amendments have been filed after the final action was entered. All previous amendments have been entered.

5. SUMMARY OF CLAIMED SUBJECT MATTER.

Claim 1 recites a computer readable medium integrated into a removable cartridge for an image forming device. *See, e.g.*, Specification, paragraph [0023] and Fig. 1. The computer readable medium includes a plurality of image enhancement data sets. *See, e.g.*, Specification, paragraphs [0029] and [0033]. At least one image enhancement data set is selected from a group of image enhancement data sets comprising an edge smoothing image enhancement data set, a halftone image enhancement data set, and an imaging material conserving image enhancement data set. *See, e.g.*, Specification, paragraph [0029]. The medium also includes data set selection criteria for use in selecting from among the plurality of image enhancement data sets. *See, e.g.*, Specification, paragraph [0033]. At least one image enhancement data set defines at least one condition selected from a group of conditions comprising a first condition associated with the edge smoothing image enhancement data set for use when printing text or line art, a second condition associated with the halftone image enhancement data set for use when printing a halftone image, and a third condition associated with the imaging material conserving image enhancement data set for use when printing a solid area of an image. *See, e.g.*, Specification, paragraph [0029].

Claim 6 recites a removable cartridge for an image forming device. The cartridge includes a printing component and a memory. *See, e.g.*, Specification, paragraph [0023] and Fig. 1. The printing component can be utilized by the image forming device to assist in producing a printed image. *See, e.g.*, Specification, paragraph [0024]. The memory is programmed with a plurality of image enhancement

data sets. See, e.g., Specification, paragraphs [0029] and [0033]. At least one image enhancement data set selected from a group of image enhancement data sets comprising an edge smoothing image enhancement data set, a halftone image enhancement data set, and an imaging material conserving image enhancement data set. See, e.g., Specification, paragraph [0029]. The memory is also programmed with data set selection criteria for use in selecting from among the plurality of image enhancement data sets. See, e.g., Specification, paragraph [0033]. At least one image enhancement data set defines at least one condition selected from a group of conditions comprising a first condition associated with the edge smoothing image enhancement data set for use when printing text or line art, a second condition associated with the halftone image enhancement data set for use when printing a halftone image, and a third condition associated with the imaging material conserving image enhancement data set for use when printing a solid area of an image. See, e.g., Specification, paragraph [0029].

6. GROUNDS FOR REJECTION TO BE REVIEWED.

- A. Claims 1-4 and 6-8 stand rejected under 35 U.S.C 102(e) as being anticipated by USPN 5,930,553 issued to Hirst.

7. ARGUMENT.

A. Ground For Rejection A – Claims 1-4 and 6-8 stand rejected under 35 U.S.C 102(e) as being anticipated by USPN 5,930,553 issued to Hirst.

A claim is anticipated under 35 USC §102 “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also MPEP 2131. “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Claim 1 expressly recites a computer readable medium integrated into a removable cartridge for an image forming device. That medium includes:

1. a plurality of image enhancement data sets including at least one image enhancement data set selected from a group of image enhancement data sets comprising an edge smoothing image enhancement data set, a halftone image enhancement data set, and an imaging material conserving image enhancement data set; and
2. data set selection criteria for use in selecting from among the plurality of image enhancement data sets,
3. wherein at least one image enhancement data set defines at least one condition selected from a group of conditions comprising a first condition associated with the edge smoothing image enhancement data set for use when printing text or line art, a second condition associated with the halftone image enhancement data set for use when printing a halftone image, and a third condition associated with the imaging material conserving image enhancement data set for use when printing a solid area of an image.

In an action mailed November 24, 2006, the Examiner mistakenly asserts that the first and third elements of Claim 1 are taught by Hirst, column 2, lines 46-51 and column 5, lines 19-24. To illustrate the mistake, the paragraph's containing the passages relied upon by the Examiner are reproduced as follows with emphasis added to the particular portions relied upon.

This invention employs a memory device located on or within the consumable and can use software in either or both the image forming or office automation device and/or software in a host computer connected to the image forming or office automation device, for example in the print driver software. A communication channel interface is provided which allows the memory device to receive and store data from a host device such as a personal computer. Additionally, the communication channel can include a data path to the various program storage elements for the microcontrollers within the image forming or office automation device which the consumable serves. This data path allows the memory device to provide software updates or patches for the software programs for the microcontrollers. **This allows device features to be added and altered and software bugs to be fixed without direct user intervention. A**

specific example, is an update to the color lookup tables which control generation of specific color shades. As toner formulations are optimized it is sometimes necessary to alter some or all of the electrographic printing parameters to take advantage of the new toner formulation. Until now, there has been no convenient way to do this to an image forming device already in service.

Hirst, col. 2, lines 32-54 .

FIG. 2 shows one possible memory segmentation scheme for memory device 19. Memory segment 19a provides storage space for the date of manufacture for the consumable. Memory segment 19b provides storage space for usage data such as the number of printed pages that the consumable has been in operation, amount of toner or ink remaining, etc. Memory segment 19c provides storage space for calibration data for use by the image forming device over the life of the consumable such as the toner to carrier ratio and sensor calibration data. Memory segment 19d provides space for storing other information such as usage information, paper types, requested print densities or any other data pertinent to the printing process. **Memory segment 19e provides storage space for software and/or firmware patches to update the software in the image forming device and may include new lookup tables such as the color lookup tables. This feature forms the basis for the second embodiment of the invention.**

Hirst discusses a printer consumable that includes a memory having a segment 19a for storing data such as a version number or manufacture date. Hirst, col. 3, lines 37-40 and Figure 2, item 19a. When the consumable is installed into the printer, the version number or manufacture date is compared with a version number or manufacture date previously stored by the printer. If the consumable has a newer version number or manufacture date, a software patch stored on the consumable's memory such as a color table is installed on the printer. Hirst, col. 3, lines 34-54 and Figure 2. Hirst's version number or manufacture date is used to determine whether or not a software patch found in memory segment 19e is going to be installed. Hirst notes that the software patch may include look-up tables such as a color look-up table. Hirst, col. 5, lines 22-23. Hirst notes that a color look-up table "controls generation of specific color shades." Hirst col. 2, lines 48-49.

At page four of the most recent Office Action, the Examiner mistakenly equates the image enhancement data sets recited in Claim 1 with Hirst's color look-up table and "software or firmware updates." Hirst's color look-up table controls generation of

specific color shades. Hirst, col. 2, lines 48-49. As such it is not a an edge smoothing image enhancement data set, a halftone image enhancement data set, or an imaging material conserving image enhancement data set. Moreover, the color look-up table does not define a condition associated with the edge smoothing image enhancement data set for use when printing text or line art, a condition associated with the halftone image enhancement data set for use when printing a halftone image, or a condition associated with the imaging material conserving image enhancement data set for use when printing a solid area of an image. Hirst mentions nothing of the contents or purpose of any other type of look-up table or any other information that may be included in a software patch.

At page 4 of the last Action, the Examiner merely states that each “entry in the color look-up table for instance is a set of data.” The Examiner has not provided evidence that image enhancement data sets **as specifically recited** in Claim 1 are inherently part of a look-up table or a software patch. To clarify, Hirst fails to teach or suggest computer readable medium integrated into a removable cartridge for an image forming device where that medium includes a plurality of image enhancement data sets and that at least one image enhancement data set is:

- an edge smoothing image enhancement data set,
- a halftone image enhancement data set, or
- an imaging material conserving image enhancement data set.

Hirst also fails to teach that the computer readable medium includes at least one image enhancement data set that defines:

- a first condition associated with the edge smoothing image enhancement data set for use when printing text or line art,
- a second condition associated with the halftone image enhancement data set for use when printing a halftone image, or
- a third condition associated with the imaging material conserving image enhancement data set for use when printing a solid area of an image.

For at least these reasons, Hirst does not teach each and every element as set forth in Claim 1. Hirst's look-up tables and software patch cannot properly be equated with the image enhancement data sets recited in Claim 1. Therefore Claim 1 is not anticipated by and is patentable over Hirst as is Claim 4 which depends from Claim 1.

Claim 6 recites a removable cartridge for an image forming device. The cartridge includes a printing component and a memory. The memory is programmed with a plurality of image enhancement data sets as recited in Claim 1. For at least the same reasons Claim 1 is patentable so are Claim 6 and Claims 7-9 which depend from Claim 6.

Conclusion

In view of the foregoing remarks, the applicant respectfully submits that Claims 1, 4, and 6-9 define allowable subject matter.

Respectfully submitted,
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APPENDIX OF CLAIMS INVOLVED IN THE APPEAL

1. (previously presented) A computer readable medium integrated into a removable cartridge for an image forming device, the computer readable medium being programmed with and comprising:

a plurality of image enhancement data sets including at least one image enhancement data set selected from a group of image enhancement data sets comprising an edge smoothing image enhancement data set, a halftone image enhancement data set, and an imaging material conserving image enhancement data set; and

data set selection criteria for use in selecting from among the plurality of image enhancement data sets,

wherein at least one image enhancement data set defines at least one condition selected from a group of conditions comprising a first condition associated with the edge smoothing image enhancement data set for use when printing text or line art, a second condition associated with the halftone image enhancement data set for use when printing a halftone image, and a third condition associated with the imaging material conserving image enhancement data set for use when printing a solid area of an image.

2-3. (canceled)

4. (previously presented) The computer readable medium of Claim 1, wherein the removable cartridge includes a printing component, and the medium is formatted to store a state variable reflecting a state of the printing component and wherein the data set selection criteria represents electronic data that can be processed with the state variable to select from among the image enhancement data sets.

5. (canceled)

6. (previously presented) A removable cartridge for an image forming device, comprising:

a printing component that can be utilized by the image forming device to assist in producing a printed image; and

a memory programmed with:

a plurality of image enhancement data sets including at least one image enhancement data set selected from a group of image enhancement data sets comprising an edge smoothing image enhancement data set, a halftone image enhancement data set, and an imaging material conserving image enhancement data set, and

data set selection criteria for use in selecting from among the plurality of image enhancement data sets,

wherein at least one image enhancement data set defines at least one condition selected from a group of conditions comprising a first condition associated with the edge smoothing image enhancement data set for use when printing text or line art, a second condition associated with the halftone image enhancement data set for use when printing a halftone image, and a third condition associated with the imaging material conserving image enhancement data set for use when printing a solid area of an image.

7. (original) The removable cartridge of Claim 6, further comprising a reservoir for holding imaging material, and wherein the printing component can be utilized by the image forming device to assist in producing a printed image using imaging material from the reservoir.

8. (original) The removable cartridge of Claim 7, wherein the memory is formatted to store a state variable reflecting a state of the printing component, and wherein the data set selection criteria represents electronic data that can be processed with the state variable to select from among the image enhancement data sets.

9. (original) The removable cartridge of Claim 7, wherein the data set selection criteria comprises a look-up table containing a plurality of entries, each entry having data representing a state condition and data identifying an image enhancement data set.

10-22 (canceled)

Evidence Appendix

There is no extrinsic evidence to be considered in this Appeal. Therefore, no evidence is presented in this Appendix.

Related Proceedings Appendix

There are no related proceedings to be considered in this Appeal. Therefore, no such proceedings are identified in this Appendix.